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## ZOOLOGY.

**The Classification of the Anthomedusan Jelly-Fishes.—**

Dr. Vanhöffen begins his attempt to arrange the Anthomedusæ<sup>1</sup> with severe criticism of the system of Haeckel and then gives that which he would propose to take its place, an outline of which follows here. The reader will notice the almost iconoclastic manner in which Dr. Vanhöffen relegates genera into synonymy.

## ANTHOMEDUSÆ.

Craspedote Medusæ with the sexual products in the ectoderm of the stomach [proboscis].

I. CODONIDÆ. Gonads not separate; embracing the proboscis as a continuous ring.

1. SYNCORYNIDÆ (SARSIADÆ). Medusæ produced from Syncoryne and similar polyps, with regular radially developed umbrella, and four well-developed tentacles. Genera: 1, *Sarsia* (including *Codonium* and *Syndiction*), Hydroid, Syncoryne; 2, *Dipurena* (including *Bathycodon*), Hydroid?; 3, *Corynetis*, Hydroid, Halocharis?.

2. PENNARIIDÆ, Medusæ with Pennaria-like hydroid; regularly developed umbrella and four rudimentary tentacles. Genus: *Globiceps*.

3. CORYMORPHIDÆ, Medusæ with Corymorpha-like hydroid; umbrella either radial or more or less irregularly bilateral; tentacles four, two, one or none.—Genera: 1, *Amalthæa*, Hydroid, *Corymorpha*; 2, *Hybocodon* (incl. *Amphicodon*), Hydroid, *Corymorpha*; 3, *Euphysa* (including *Steenstrupia*), Hydroid?; 4, *Diconodum*, Hydroid?; 5, *Ectopleura*; Hydroid, *Ectopleura*.

II. OCEANIDÆ. Four or fewer pairs of interradial gonads in the ectoderm of the proboscis.

A. Cœlomerintha. Strongly contractile hollow tentacles whose small entoderm cells enclose a large lumen.

4. AMPHINEMIDÆ. With numerous marginal lobes like rudimentary tentacles between fewer well-developed tentacles.—Genus *Stomatoca* (including *Amphinema* and *Codonorchis*).

5. TIARIDÆ. With numerous well-developed tentacles. Young with two (*Dinema*) or more tentacles between which are seen the soli-

<sup>1</sup>Zool. Anz. xiv. p. 439, 1891.

tary rudiments of other tentacles as thickenings of the umbrella margin.—Genera: 1, *Conis*; 2, *Tiara*, Hydroid, *Campaniclava*?; 3, *Turris*, Hydroid, *Clavula*; 4, *Catablema*.

**B. Pycnomerinthia.** Tentacles solid; filled with large entoderm cells.

*a.* MONERENEMATA. With simple separate tentacles.

6. DENDROCLAVIDÆ. With sessile nematophores on the margin of the mouth—Genus *Turritopsis*, Hydroid, *Dendroclava*.

7. PODOCORYNIDÆ. With short oral tubes and stalked nematophores on the mouth margin—Genera: 1, *Cytxeis*; 2, *Thamnitis*; 3, *Cubogaster*; 4, *Dysmorphosa* (including *Cytxeandra*), Hydroid, *Podocoryne*.

8. THAMNOSTOMIDÆ. Oral tube elongate, surpassing the stalked nettle clusters.—Genera, 1, *Thamnostylis*; 2, *Thamnostoma*; 3, *Limnorea*.

*β.* Lophonemata. Tentacles simple, in bunches.

9. BOUGAINVILLEIDÆ<sup>1</sup>. With stalked nematophores on oral margin.—Genera: 1, *Margelis*; 2, *Hippocrene* (including *Nemopsis*); 3, *Rathkea*.

*γ.* Cladonemata. With compound, feathered or branched tentacles.

10. PTERONEMIDÆ. Tentacles feathered.—Genera: *Pteronema*; *Ctenaria*; *Zanclaea*; *Gemmaria*.

11. DENDRONEMIDÆ. With branched tentacles—Genera: 1, *Cladonema* (including *Dendronema*); 2, *Eleutheria*.

**Free-Swimming Sporocysts.**<sup>2</sup>—M. Braun has studied “free-swimming sporocysts” similar to those described by Prof. Wright,<sup>3</sup> only larger,—6 mm. long. They are shaped like a T and in the stem of the T a distorted Distomum was visible. Thus these apparently free-swimming sporocysts are enormously developed Cercariæ, closely allied to *C. macrocerca* and *cystophora*, except in furcocercal form. They apparently come from *Limnæus palustris* var. *corvus*. Feeding experiments were not successful in determining the final host.

**Peripatus leuckartii** Oviparous.<sup>4</sup>—Dr. Arthur Dendy thinks he has evidence to show that *Peripatus leuckartii*, unlike the rest of its congeners, lays eggs. He had one male and three females of the

<sup>1</sup>*Lizusa*, *Lizzia*, *Lizzella* and *Margellium* are included as young forms which can occasionally become sexually mature.

<sup>2</sup>Zool. Anz., xiv, 368, 1891.

<sup>3</sup>Am. Nat., xix, 310, 1885.

<sup>4</sup>Zool. Anz., xiv, 146, 1891.

species in a small vivarium, and on examination he found under a bit of rotten wood some twelve or fifteen eggs which closely resembled those taken from the oviducts of other females except that the chorion was exquisitely sculptured. This evidence is relative, not absolute, as will readily be seen.

**North American Thysanures.**<sup>1</sup>—Alex. Macgillivray catalogues the known species of North American Thysanura, enumerating 74 species. The list leads off with the three species of Scolopendrella.

**Stridulation in Lepidoptera.**—At the meeting of March 1, 1892, of the Zoological Society of London, Mr. G. F. Hampson read a paper on stridulation in certain Lepidoptera. The author attributed the clicking sound described by Darwin as produced by various species of the South American genus *Angerona*, and confirmed by Wallace and other observers, to the presence of a pair of strong corneous hooks with spatulate ends attached to the inner margin of the fore wings close to the base, and surrounded by a membranous sac which acts as a sounding board. An account was given of a similar sound produced by the males of a Burmese moth of the family *Agaristidæ* and of a buzzing sound in an allied Australian form, both of which have a patch of ribbed hyaline membrane below the costa of the fore wing. The sound was attributed to the friction of spines, attached, in the former to the first pair of legs, in the latter to the second pair, upon the ribbed membrane. A description was then given of the transformation of the costal half of the hind wing in the Noctuid genus *Patula* into a large scent gland, and of the manner in which this had distorted the neuration.—Zool. Anz., No. 387.

**A New Compound Ascidian.**—W. Garstang describes<sup>2</sup> under the name *Archidistoma*, a new genus of the Ascidian family *Distomidæ* which is of especial interest since "it exhibits the first stage in the evolution of the cœnobitic type of colony from the Social Ascidian type, in which the zooids are entirely free and irregularly placed; in *Archidistoma aggregatum* the clumps of zooids (primitive cœnobias) have no common cloaca, but the cloacas of the individuals are usually situated towards the center of the groups. The second stage is exhibited in such a compound Ascidian as *Synoicum turgens* or *Circinalium concrescens*, in which each of the isolated clumps of zooids possesses a common central cloaca."

<sup>1</sup>Can. Entomol., xxi, 267, 1891.

<sup>2</sup>Zool. Anz., xiv, 422, 1891.

**Lateral-Line Organs of Sharks.**—Ewart and Mitchell, in two papers<sup>1</sup> describe the sensory canals in *Læmargus* and *Raia*. The lateral-line organs consist of two systems of canals and of minute sensory follicles. The so-called sensory canals open to the surface of the skin by numerous tubules, while the ampullar canals are enlarged at the proximal ends, and give off neither tubules nor branches. Previous authors have described the sensory canals according to position; Ewart and Mitchell think innervation should be the basis of grouping. The canals receive their nerve supply, 1, from the facialis or, 2, from the vagus, the latter innervating the lateral canal. Of the canals innervated by the facialis three main stems are recognized, the supraorbital, supplied by the ophthalmic; the infraorbital by the buccalis; and the hyomandibular by the corresponding divisions of the facialis. The further details have little interest in an abstract, except the great extension of the hyo-mandibularis canal over both surfaces of the pectoral fin of the skates. In this connection the editor may state that some as yet unpublished researches tend to show that these canals promise to throw considerable light upon the phylogeny of the fish-like vertebrates.

**Parallel Color-Patterns in Lizards.**—In THE NATURALIST for December, 1891, p. 1135, I called attention to the identical color-patterns displayed by the varieties of our two South-western species of *Cnemidophorus*, *C. tessellatus* and *C. gularis*, and the general similarity these species present to the *Lacerta muralis* of the Mediterranean countries, in color variations, which are pointed out by Prof. Eimer. Having recently published a paper on *Cnemidophorus* in the Transactions of the American Philosophical Society, I give two plates illustrating these facts. Plate xviii represents the two species of *Cnemidophorus*, A to F the *C. tessellatus*, and G to L the *C. gularis*. A is the color-pattern of the young and half-grown; B is *C. t. perplexus* B. and G., adult; C, *C. t. tessellatus*  $\alpha$ ; D *C. t. tessellatus*  $\beta$ ; E *C. t. tessellatus*  $\gamma$ ; F *C. t. rubidus* Cope; G *C. gularis* young and half grown; H do. adult; I and K, *C. g. sealous* Cope  $\alpha$  and  $\beta$ ; L *C. g. semifasciatus* Cope. Plate xix represents some of the variations of the *Lacerta muralis*. A represents the young coloration; B the var. *L. m. campestris*; C the *L. m. albiventris*; D *L. m. maculata*; E *L. m. tigris*.—E. D. COPE.

<sup>1</sup>Zool. Anz., xv, 116, 118, 1892.

**A New Genus of Bats.**<sup>1</sup>—Dr. Harrison Allen considers the *Histiotus maculatus* of Mr. J. A. Allen as the type of a new genus for which he proposes the name *Euderma*. It is a Plecotian genus without muzzle processes and with two premolars in the lower jaw.

**Human Rumination.**—It is well known that there are some persons who possess the power of regurgitating their food, causing it to pass from the stomach back to the mouth, and to do this voluntarily; this is the difference between rumination and involuntary regurgitation, or eructation. Heredity plays here, perhaps, an important role; the imitation is frequent, and men are more addicted to the habit than women. Rumination is a physiological phenomena, which can be of use in studying the digestive functions; it is also a pernicious habit, or, at least an unpleasant one. Many persons have contracted this habit because it gives them pleasure, because the food thus regurgitated has an agreeable flavor; one of them said that "it was sweeter than honey and more delicious." The point of departure toward this habit is often accidental; it is caused by the ingestion of some irritating and indigestible substance. A well known physiologist became a ruminant while endeavoring to obtain some gastric juice from his own stomach. He swallowed a sponge to which was attached a thread; the irritation of the foreign substance caused a regurgitation which persisted for some time. There are some who regularly practice rumination for the pleasure experienced; others, only after they have eaten hastily. In the latter case it is a hygienic measure. The regurgitated food has an agreeable flavor as long as the stomach is sound and well, otherwise it is disagreeable.

In order to be rid of this habit, which, to say the least is an unpleasant one, the food should be thoroughly masticated and all care should be taken to exclude irritating and indigestible substances. In extreme cases it is sometimes necessary to limit the patient to liquid foods for some time.—(*Revue Scientifique*, March, 1892.)

<sup>1</sup>Proc. Phila. Acad., 1891, 467.